

A New Liphistiid Spider from China (Araneae: Liphistiidae)

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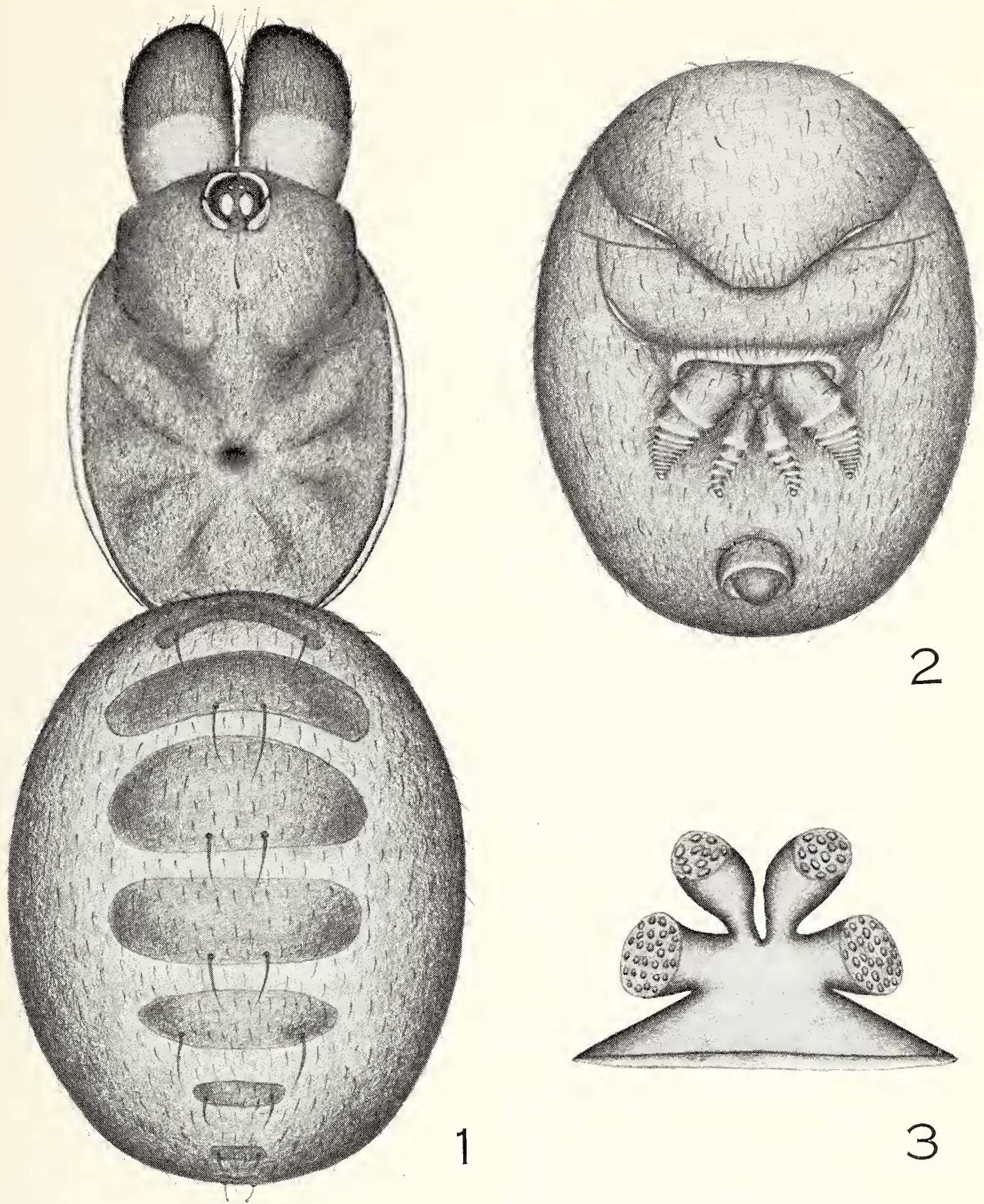
Abstract: A new species of liphistiid spider, *Heptathela bristowei*, is described on the basis of a female from Szechuan, China. In a discussion the author concludes that the family Heptathelidae cannot be maintained and that the species with a posterior colulus (*Heptathela*) be given only generic ranking.

Family Liphistiidae

This small family comprising our most generalized spiders was reviewed by Bristowe (1932), who gave comparative data on the then known seven species of *Liphistius* and two species of *Heptathela*. In 1939 Petrunkevitch raised the latter genus to full family status on the basis of characters found in the internal anatomy of a female of *Heptathela sinensis* Bishop and Crosby (1933). The new family Heptathelidae was relegated to synonymy by Gertsch (1949, p. 265) but was recognized by Vachon (1958, p. 431), who contributed important new information on the postembryonic development of *Heptathela kimurai* Kishida.

The family Heptathelidae was based on the following principal features: reduction of the posterior median spinnerets to a functionless vestige, a posterior colulus; reduction of the number of ostia in the heart from five to four pairs; loss of the endocheliceral venom glands. In *Liphistius* all eight spinnerets are still retained, the heart has five pairs of ostia, and the venom glands, although reduced in size, are still present. Such regressive changes as those credited to *Heptathela* may have great systematic importance or almost none at all. It should be mentioned that these internal differences are based on knowledge of only half a dozen specimens of at most three or four species. Except for the loss of the posterior median spinnerets, the genus *Heptathela* shows such close correspondence to *Liphistius* that it seems undesirable to accord it more than generic distinction.

An even more conservative position was taken by Schenkel (1953, p. 1) when he described a species, that should now be listed as *Liphistius schensiensis* Schenkel, under the following trinomial: *Liphistius (Heptathela) sinensis* (Bishop and Crosby), var. *schensiensis*, n. var. Since his specimen had eight spinnerets, instead of the seven credited to *sinensis*, he concluded that this feature was not constant. Further, he saw no need to give even subgeneric recognition to *Heptathela* (misspelled *Heptathele*). Whereas it must be conceded that the two genera are remarkably alike, it seems desirable to continue to hold them separate on the basis of the differences in the posterior median



FIGS. 1-3. *Heptathela bristowei*, n. sp., female. 1. Carapace and abdomen, dorsal view. 2. Abdomen, ventral view. 3. Epigynum, dorsal view.

spinnerets. Thus, *Liphistius schensiensis* Schenkel is the eighth species of its genus and the species described below is the third for *Heptathela*.

No mention of the internal seminal receptacles of any female liphistiid was made by Bristowe (1932) or any of the principal students who considered the systematics and morphology of the group. This organ (for which I use

the term epigynum in its broadest connotation) is of the "haplogyne" type. In the Atypoidea (Gertsch, 1949, p. 126, 1128, etc.), there are four primary seminal receptacles. The epigynum of *Liphistius malayanus* Abraham was illustrated by Schiapelli and Gerschman (1962, pl. 2, figs. 5-6) and shows the four, rather small receptacles, flanking a central pouch, as well as a central cluster of globular organs. The epigynum of *Heptathela bristowei* is of the same general type and is similar to that of *kimurai*, the type of the genus. Whereas most of the typical tarantulas (Ctenizoidea) have epigyna with a single seminal receptacle on each side, a few exceptions have been illustrated by Schiapelli and Gerschman (1962, pl. 4, figs. 1-3).

Heptathela bristowei, n. sp.

Figures 1-3

This interesting species is dedicated to Mr. W. S. Bristowe, colleague and eminent author of "The World of Spiders," and one who has contributed much to knowledge of the biology and taxonomy of the liphistiid spiders.

DIAGNOSIS: This species resembles *Heptathela sinensis* Bishop and Crosby, from Tsinan, Shantung, China, but is readily separated by the following features: The pars cephalica is proportionately narrower in front and its greatest width is only four-fifths the distance to the cervical groove, instead of having these ratios equal. The four median eyes, encircled by the narrowly oval lateral eyes, are closer together. The cervical groove is considerably larger and deeper. The fourth femora are provided below on the retrolateral margin with a double row of short spinules, instead of eight spines. The tergal plates on the abdomen are smaller in size and the first lung plate is of different form, as shown in the figures.

FEMALE HOLOTYPE: Total length, including chelicerae, 19.5 mm.

	Carapace	Sternum	Labium	Maxilla	Abdomen
Length	7.0	3.5	1.0	3.0	10.0 mm.
Width	5.7	2.4	2.0	1.5	8.0 mm.

Carapace orange to reddish brown; pars cephalica dusky and pars thoracica with dusky streaks radiating from median groove; eye tubercle black. Chelicerae dull reddish brown, pale at base above. Sternum, labium and appendages quite uniform dull orange brown. Abdomen gray; tergites dusky brown.

Dorsal view of carapace and abdomen as shown in fig. 1.

Structure typical, essentially like that of *sinensis*. Carapace quite smooth, bare except for tiny setae lying flat on pars cephalica, a middle line of about six stout setae running through and behind median eyes, a series of four setae on clypeal margin, with median pair much longer, and a line of small setae margining carapace. Carapace broadly rounded in front, sharply angled at corners, gently rounded on sides and truncated behind. Pars cephalica strongly elevated, highest just behind eyes; cervical groove deep rounded depression smaller than eye turret, situated back five-eighths of length; pars thoracica low, convex, with transverse grooves.

Eyes all close together, set on rounded tubercle of typical height. Clypeus inclined forward, narrow, equal to about radius of posterior median eye. Ratio of eyes: ALE : AME : PLE : PME = 62 : 6 : 48 : 35. Front eye row slightly procurved; lateral eyes large, narrowly oval, nearly touching in front; median eyes minute, lying in front of posterior

median eyes. Posterior eye row moderately recurved; oval median eyes close together, separated by one-fourth their narrow diameter, about as far at narrowest point from larger oval lateral eyes. Median ocular quadrangle broader than long, narrowed in front, with anterior eyes minute.

Sternum an elevated sclerite with steep sides, covered with coarse setae, without trace of sigilla. Labium free, separated from sternum by deep, transverse groove, set with black setae. Maxilla truncated at apex, with setae over most of surface and brush of soft hairs along inside margin. Chelicera about 3 mm. long as seen from above, smooth at base, expanded toward apex and set with coarse setae, rounded at apex above claw and without rake; fang of median length, rather stout, lying in indistinct groove margined on prolateral side by row of eight, close-set, black teeth, three of these larger, and on retro-lateral side with thin brush of soft reddish hairs.

	I	II	III	IV	Palpus
Femur	4.7	4.1	4.3	6.1	4.3 mm.
Patella	2.7	2.6	2.7	3.1	2.4 mm.
Tibia	3.0	2.7	2.7	4.2	3.0 mm.
Metatarsus	3.0	3.2	3.5	5.8	—
Tarsus	1.7	2.0	2.1	2.7	3.7 mm.
Total	<u>15.1</u>	<u>14.6</u>	<u>15.3</u>	<u>21.9</u>	<u>13.4 mm.</u>

LEG FORMULA: 4312. All legs short, clothed sparsely above with hairs and weak spines and below and on sides with more numerous, stouter spines. First and second legs with rows of stout ventral spines on tibiae, metatarsi and tarsi, those on anterior segments nearly lateral in position. Femora with ventral hairs and weak spines; fourth femora with 20 or more stout spinules below in double row near retrolateral edge. Pedipalp with stout sub-lateral spines; tarsus set with even row of seven heavy spines on lateral margins; palpal claw with single tooth at base. Paired claws of legs with two teeth near base; unpaired claws quite straight, unarmed below.

ABDOMEN (figs. 1-2): Globose, covered evenly with tiny setae. Ten tergites visible on dorsum with lateral measurements of these, in millimeters, from front to rear as follows: 3.5; 4.3; 4.2; 4.2; 3.3; 1.8; 1.1; 0.8; 0.7; 0.6; thus, sixth and succeeding tergal plates greatly reduced in size; each tergal plate with pair of prominent alveoli on caudal edge, bearing long spines. First lung plate gradually produced behind to evenly rounded projection, without special angles or evident grooving. Spinnerets of average size; posterior colulus a small tubercle bearing three tiny setae.

EPIGYNUM (fig. 3): Consisting of four receptacles; lateral receptacle of each pair larger than inner one.

TYPE DATA: Female holotype from Wanhsien, Yen-Ching-Kao, Szechuan, China, February, 1922 (W. Granger), in the American Museum of Natural History.

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